

REMARKS

In the Office Action, the Examiner rejected claims 1, 2 and 5-15. Applicants request reconsideration of claims 1, 2 and 5-15 in view of the amendments set forth above and the following remarks.

Claim Rejections under 35 U.S.C. § 102

In the Office Action, the Examiner rejected claim 1 under 35 U.S.C. § 102(b) as being anticipated by Stewart (U.S. Patent No. 4,589,547)(“the Stewart reference”). Applicants respectfully traverse this rejection. Specifically, with regard to the independent claims the Examiner stated:

Stewart teaches the device of claim 1 in that a holder (carrier) having a plurality of stack die is adapted to temporarily hold the plurality of die stacks (column 2 lines 32-37 and column 3 lines 34-34, 65-66, a stack of die reads on a plurality of die stacks).

Regarding the recitation “being adapted” this is a product by process limitation and is given no patentable weight.

Office Action, 2.

Anticipation under 35 U.S.C. § 102 can be found only if a single reference shows exactly what is claimed. *Titanium Metals Corp. v. Banner*, 778 F.2d 775, 227 U.S.P.Q. 773 (Fed. Cir. 1985). For a prior art reference to anticipate under 35 U.S.C. § 102, every element of the claimed invention must be identically shown in a single reference. *In re Bond*, 910 F.2d 831, 15 U.S.P.Q.2d 1566 (Fed. Cir. 1990). To maintain a proper rejection under 35 U.S.C. § 102, a single reference must teach each and every limitation of the rejected claim. *Atlas Powder v. E.I. du Pont*, 750 F.2d 1569 (Fed. Cir. 1984). Accordingly, the Applicants need only point to a

single element not found in the cited reference to demonstrate that the cited reference fails to anticipate the claimed subject matter.

Regarding functional limitations, the Examiner must evaluate and consider the functional limitation, just like any other limitation of the claim, for what it fairly conveys to a person of ordinary skill in the pertinent art in the context in which it is used. *See* M.P.E.P. § 2173.05(g); *In re Swinehart*, 169 U.S.P.Q. 226, 229 (C.C.P.A. 1971); *In re Schreiber*, 44 U.S.P.Q.2d 1429, 1432 (Fed. Cir. 1997).

Embodiments of the present technique are directed to forming a completed die stack on a temporary holding surface (e.g., a film frame, gel pack, tape reel, JEDEC tray) for later attachment to a substrate. *See* Application, page 12, lines 11-13. One advantage of the technique of forming the entire die stack prior to attaching it to a substrate is that the entire die stack can be attached to the substrate with a single motion, thereby reducing the number of iterations as compared to the typical method of forming die stacks directly on the substrate. *See id.* at page 13, line 20 – page 14, line 2. Further, embodiments of the present technique may allow for curing and/or testing of the die stack on the temporary holding surface prior to attachment to a substrate. *See id.* at page 12, lines 12-17.

Accordingly, amended independent claim 1 recites, “[a] holder having a plurality of *semiconductor die stacks* thereon, the holder configured to temporarily hold the plurality of semiconductor die stacks, wherein each of the plurality of semiconductor die stacks include at least two semiconductor die coupled together by an adhesive and wherein the plurality of semiconductor die stacks *do not include a lead frame or a substrate.*” Emphasis added.

In contrast to the present claim recitations, the Stewart reference merely teaches multiple individual die that are positioned in a stacked relationship with respect to one another. *See Stewart et al.*, col. 3, lines 65-66. Applicants respectfully assert that the individual die in a stacked relationship, as taught by the Stewart reference, are not equivalent to the presently recited semiconductor die stacks, which include at least two semiconductor die coupled together by an adhesive. Indeed, this distinction between semiconductor die stacks and individual die in a stacked relationship is essentially admitted by the Examiner on page 3 of the Office Action. Further, Applicants assert that the Stewart reference certainly does not teach semiconductor die stacks that do not include a lead frame or a substrate, as presently recited. Accordingly, the Stewart reference fails to teach all of the recited features of claim 1.

Further, Applicants assert that the Examiner's concerns with regard to the "being adapted" language are completely unfounded. Indeed, Applicants assert that "being adapted" is functional language that the Examiner *must* evaluate for what it fairly conveys to a person of ordinary skill in the art. *See* M.P.E.P. § 2173.05(g). However, while Applicants strongly disagree with the Examiner not giving the "being adapted" language patentable weight, in the interest of furthering prosecution, Applicants presently amend claim 1 to replace the "being adapted" with "configured," as set forth above.

For the reasons set forth above, the Applicants respectfully request withdrawal of the rejection of claim 1 under 35 U.S.C. § 102. Further, Applicants request that the Examiner provide an indication of allowance for independent claim 1 and the claims depending therefrom.

Applicants assert that the dependent claims are allowable based on their dependency from an allowable base claim and based on unique matter recited in each dependent claim.

Rejections Under 35 U.S.C. § 103

The Examiner rejected claims 5 and 7-9 under 35 U.S.C. § 103(a) as being unpatentable over the Stewart reference, in view of Pai (U.S. Pat. No. 6,503,776)(“the Pai reference”). Further, the Examiner rejected claim 6 under 35 U.S.C. § 103(a) as being unpatentable over the Stewart reference, in view of the Pai reference and further in view of Hakey (U.S. Pat. No. 6,627,477)(“the Hakey reference”). Also, the Examiner rejected claims 1-2, 10-11 and 13-15 under 35 U.S.C. § 103(a) as being unpatentable over Wood (U.S. Pat. No. 5,145,099)(“the Wood reference”), in view of the Pai reference. Finally, the Examiner rejected claims 12-13 under 35 U.S.C. § 103(a) as being unpatentable over the Wood reference, in view of the Pai reference, and further in view of the Hakey reference.

The burden of establishing a *prima facie* case of obviousness falls on the Examiner. *Ex parte Wolters and Kuypers*, 214 U.S.P.Q. 735 (P.T.O. Bd. App. 1979). To establish a *prima facie* case, the Examiner must show that the combination includes *all* of the claimed elements. *Ex parte Clapp*, 227 U.S.P.Q. 972 (Bd. Pat. App. & Inter. 1985).

As set forth above, independent claim 1, as amended, recites “a plurality of semiconductor die stacks ... wherein each of the plurality of semiconductor die stacks include at least two semiconductor die coupled together by an adhesive and wherein the plurality of semiconductor die stacks *do not include a lead frame or a substrate.*” Emphasis added. Similarly,

amended independent claim 10 recites, “[a] tape reel having a plurality of *semiconductor die stacks* thereon, the tape reel configured to temporarily hold the plurality of semiconductor die stacks, wherein each of the plurality of semiconductor die stacks include at least two semiconductor die coupled together by an adhesive and wherein the plurality of semiconductor die stacks *do not include a lead frame or a substrate.*” Emphasis added.

Applicants respectfully assert that none of the references cited by the Examiner teach these features of independent claims 1 and 10. For example, the stacked chip packages described in the Pai reference each include a substrate 120. *See* Pai et al., col. 2, line 66 – col. 3, line 8; and FIGS. 1-10. Further, none of the references, whether considered separately or in hypothetical combination, disclose a holder or tape reel temporarily holding such semiconductor die stacks thereon, as recited in independent claims 1 and 10. Accordingly, whether considered separately or in a hypothetical combination, the cited references fail to teach all of the features recited in independent claims 1 and 10. Thus, the presently cited references do not support a *prima facie* case of obviousness.

For the reasons set forth above, Applicants respectfully request withdrawal of the rejections under 35 U.S.C. § 103. Specifically, Applicants request that the Examiner withdraw the rejection of independent claims 1 and 10, and the claims depending therefrom. Further, Applicants request that the Examiner provide an indication of allowance for independent claims 1 and 10, and the claims depending therefrom. Applicants assert that the dependent claims are allowable based on their respective dependencies and based on unique matter recited in each dependent claim.

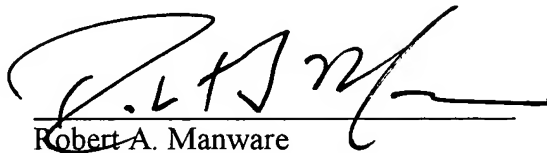
Conclusion

In view of the remarks set forth above, Applicants respectfully request allowance of claims 1, 2 and 5-15. If the Examiner believes that a telephonic interview will help speed this application toward issuance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Date: _____

5/22/06

Respectfully submitted,



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